

Perioral wrinkles are associated with female gender, aging, and smoking: Development of a gender-specific photonumeric scale

Anna L. Chien, MD,^a Ji Qi, BA,^a Nancy Cheng, MD,^a Thy Thy Do, MD,^b Missale Mesfin, MD,^b Robert Egbers, MD,^b Wenfei Xie, MD,^b Conroy Chow, MD,^b Heather Chubb, MS,^b Dana Sachs, MD,^b John Voorhees, MD,^b and Sewon Kang, MD^a
Baltimore, Maryland, and Ann Arbor, Michigan

Background: Perioral wrinkling is commonly reported among older adults, but its objective evaluation and causes remain poorly understood.

Objective: We sought to develop a photonumeric scale for perioral wrinkling and to elucidate contributory lifestyle factors.

Methods: In this cross-sectional study, we recruited participants for facial photographs and a survey. A gender-specific photonumeric scale for perioral wrinkling was developed and used by 3 graders to evaluate participant photographs. Scores and survey responses were used to create a multiple regression model to predict perioral wrinkling.

Results: In all, 143 participants aged 21 to 91 years were enrolled. Intraclass correlation coefficient values for interrater and intrarater reliability were high (>0.8) across 2 trials and 3 graders. A multiple regression model for prediction of perioral wrinkling severity included age, gender, and years of smoking as variables.

Limitations: The study was limited by sample size and a predominantly Caucasian study population.

Conclusion: We created a photonumeric scale that accounts for gender differences in perioral wrinkling and highlighted contributory variables to photoaging in this anatomical location. (*J Am Acad Dermatol* <http://dx.doi.org/10.1016/j.jaad.2015.11.042>.)

Key words: crows feet; gender differences; perioral wrinkling; photoaging; photonumeric scale; smoking.

Perioral wrinkles (rhytides) are common but underrepresented in the literature. Potential contributors include sun exposure, skin phototype, smoking, and hormone replacement. Wrinkling may also be influenced by activity of the orbicularis oris muscle.^{1,2} The anatomical properties of the perioral area suggest that other causes may also play a role. Clinical impression suggests perioral wrinkling affects women more than men. The postmenopausal period may decrease dermal collagen, increasing wrinkles.³ Gender differences

Abbreviations used:

CI:	confidence interval
ICC:	intraclass correlation coefficient
NSAID:	nonsteroidal anti-inflammatory drug

in orbicularis oris muscle use have also been described.⁴ Overall the origin remains unclear, and no studies to our knowledge have systematically investigated factors relating to perioral wrinkling.

From the Departments of Dermatology at Johns Hopkins University, Baltimore,^a and University of Michigan.^b

Funding sources: None.

Conflicts of interest: None declared.

Accepted for publication November 25, 2015.

Reprint requests: Anna L. Chien, MD, Departments of Dermatology, Johns Hopkins University, 601 N Caroline St, Suite 8060C, Baltimore, MD 21287. E-mail: achien3@jhmi.edu.

Published online January 20, 2016.

0190-9622/\$36.00

© 2015 by the American Academy of Dermatology, Inc.

<http://dx.doi.org/10.1016/j.jaad.2015.11.042>

Photonumeric scales are more reliable than descriptive scales for grading skin aging.⁵ Photonumeric scales have been developed for evaluating photodamage in Caucasians and Asians, and for chronologic aging in Caucasians.⁵⁻⁷ Grading scales also exist for the crows feet area, marionette lines, and forehead lines.⁸⁻¹⁰ Scales have been developed to evaluate the severity of perioral lines at rest, oral commissures, and perioral lines at maximal contraction.¹¹ However, a scale that accounts for gender differences in the perioral area is lacking.

To this end, we propose a gender-specific photonumeric scale for assessing perioral rhytides. Three blinded graders used this scale to rate patients according to photographic standards. We assessed demographic and lifestyle variables to investigate contributory factors to perioral wrinkling. Association with crows feet wrinkling severity was also examined.

METHODS

Participants

In all, 143 individuals aged 21 to 91 years were enrolled (Table 1). Participants were recruited from the general dermatology clinic at the University of Michigan and provided written informed consent before enrollment. The study was approved by the University of Michigan Institutional Review Board.

Photography

Facial photographs were taken by a professional photographer in the University of Michigan Program for Clinical Research in Dermatology. We used a digital camera and microflash unit (Nikon D1x; Nikon, Tokyo, Japan). Flash output and camera-to-face distance were held constant.

Photographic scale

Five participant photographs were selected as standards and assigned grades of 0, 2, 4, 6, or 8, where 0 represents no wrinkling and 8 represents severe wrinkling. Intermediate grades (1, 3, 5, or 7) were permitted. Standards were excluded from analyses. Separate scales were developed for women and men, such that 10 participants contributed photographs for perioral standards. Male- and female-specific crows feet scales were also developed.

Testing the photographic scale

Three evaluators (2 dermatology residents and 1 research fellow) individually graded participant photographs using the perioral and crows feet scales. Each photograph was evaluated using both the male and female scales. Evaluators were blinded to participants' history. After 2 weeks, photographs were rerandomized and regraded. Evaluators were blinded to the first set of scores. Interrater reliabilities for both rounds and intrarater reliabilities were assessed by calculating the intraclass correlation coefficient (ICC).

Collecting data about multiple health and lifestyle factors

Participants completed a questionnaire that addressed age, gender, race/ethnicity, body mass index, smoking, use of nonsteroidal anti-inflammatory drugs (NSAIDs), use of herbal or dietary supplements, lip product use, sun exposure, sunscreen use, retinoid use, and tanning bed use. Women were asked about the number of biological children, use of hormone therapy, and oral contraceptive use. Men were asked about facial hair.

Participants estimated average h/d of sun exposure, categorized as minimal (<1 h/d), moderate (1-3 h/d), or severe (>3 h/d). Tanning bed exposure was categorized as none, minimal (<10 total lifetime visits), moderate (≥ 10 lifetime visits but <1 visit/d), or severe (≥ 1 visit/d). Hormone therapy and oral contraceptive use were measured in years, as were duration of smoking, sunscreen use, retinoid use, lip product use, and possession of facial hair. NSAID use and herbal or dietary supplement use were noted as present or absent.

Statistical analysis

Descriptive statistics were generated for surveyed factors. We performed a paired *t* test to compare each participant's scores on the gender-specific scales for perioral wrinkling. We performed independent *t* tests to compare the degree of wrinkling in men and women, also stratified by age and smoking.

A mean perioral wrinkling severity score was determined by averaging grades from all 3 evaluators in rounds 1 and 2. Scores from respective gender scales were applied, such that only the female scale scores were included in the average for female

CAPSULE SUMMARY

- Perioral wrinkling is commonly reported among older adults.
- We created a photonumeric scale for perioral wrinkling that highlights age, gender, and smoking as contributory variables to photoaging in this anatomical location.
- This scale may be used for objective evaluation of interventions targeting perioral wrinkling.

Download English Version:

<https://daneshyari.com/en/article/6069789>

Download Persian Version:

<https://daneshyari.com/article/6069789>

[Daneshyari.com](https://daneshyari.com)